West Virginia - 2007

Forest Health Highlights

The Resource

The West Virginia landscape is dominated by more than 11.8 million acres of forest. Due in large part to its varied topography, the forest is a rich diversity of oak, hickory, spruce, pine, and the WV State Tree, sugar maple. Ninety percent of all forests in West Virginia are privately owned, but there are 9 State forests, 36 State parks, and 56 wildlife management areas that provide public enjoyment.

Forest Stewardship

The Forest Stewardship Program philosophy ensures that private landowners apply environmental and economic resource management principles to benefit themselves, future landowners, and the public. The focal point of the Forest Stewardship Program is the development of a long-term management plan for each woodland owner who is willing to participate. In West Virginia, the Forest Stewardship Program includes having a forest management plan written by a professional forester, as well as financial assistance for recreation, forest improvement, soil and water protection, wetlands protection, and fisheries and wildlife habitat enhancement. There have been 4,040 forest stewardship plans developed covering 672,135 acres in West Virginia as of December 31, 2004.

Special Issues

Gypsy Moth — West Virginia Department of Agriculture (WVDA) field agents surveyed more than 363,792 acres of State and private land during the fall of 2007 to determine areas at risk for potential gypsy moth defoliation in the spring of 2008.

The WVDA completed treatments on 11,156 acres under the Gypsy Moth Cooperative State County Landowner (CSCL) Suppression Program. No treatments were made in the gypsy moth Slow the Spread area. WVDA Cooperative Forest Health Protection specialists flew and sketch mapped 77,910 acres of gypsy moth defoliation in 10 counties in West Virginia. This was an increase from last year's total of 17,272 acres.

***Phytophthora ramorum* Laboratory Provisional Approval Program** — Personnel from the WVDA Plant Industries Division PCR Laboratory participated in the *Phytophthora ramorum* Laboratory Provisional Approval Program offered by USDA APHIS Plant Protection Quarantine (PPQ). Lab personnel went through the training in February 2007, were administered the proficiency panel in April, and were notified in June that they had passed the test panel. WVDA lab personnel have approval to perform validated diagnostic tests for *Phytophthora ramorum*, the causal agent of sudden oak death (SOD), on behalf of the USDA APHIS PPQ programs. The lab and its personnel are provisionally approved for 2007.

***Phytophthora ramorum* Early Detection Survey using Forest-Stream Baiting** — This is the second year that stream baiting was used for early detection of *Phytophthora ramorum* and detection of other *Phytophthora* species using bait leaves in a stream environment. The U.S. Forest Service launched a pilot survey in 2006.

Initially, four streams were chosen, and one was dropped from the survey after one baiting period because the stream dried up. Three of the four streams were in the same watershed as a nursery that was receiving western plant materials that were potentially contaminated with SOD. Therefore, these streams provided ideal locations for baiting. Old bait traps were placed downstream from the nursery within the watershed.

Culturing (WVDA) and real-time PCR (Mississippi State University) were used to detect *P. ramorum*. Culturing was used to detect general *Phytophthora* species, and ELISA was used to corroborate culturing results. *P. ramorum* was not detected in any of the bait leaves sampled or cultured. *Phytophthora* species were recovered 100 percent of the time over the 5-month baiting window.

Ash Yellows — A survey for ash yellows was conducted to see if this disease had spread significantly in the past 11 years. Ash decline was also noted during the survey and was readily found throughout the State. Six new counties have been added to the 16 initial counties that have ash yellows—Hancock, Pleasants, Pendleton, Nicholas, Randolph, and Summers. In 11 years, the disease has remained relatively static.

Healthy/"Resistant" Beech — The goal this year was to conduct a *preliminary* survey of beech trees that are still scale free and healthy in high-mortality areas resulting from the beech bark disease (BBD) complex, and beech trees that still remain scale free in areas that are heavily infested with scale. Several areas were chosen in both the killing and advancing fronts. Data collected included diameter at breast height (d.b.h.), bark condition, and crown condition.

The trees that seemed to display resistance had characteristics such as smooth, gray bark; full crowns with no decline or minimal decline; and no yellowing of the leaves. Most trees had a d.b.h. that ranged

from 23 to 54 cm. Nine of 17 stands had at least one tree that did not succumb to scale infestation. Four stands had two trees clumped together that were scale free, two stands had three scale-free trees that were clumped together, and one stand had nine trees that were clumped together and scale free.

Much more testing using vegetative propagation and molecular genetics will be needed to verify resistance, which several researchers are working on. However, identifying pockets of possibly resistant trees will be of value in the long run, particularly when a genetic marker for resistance is identified.

Emerald Ash Borer (EAB) — EAB was detected for the first time in West Virginia on October 4, 2007, when a WVDA field agent collected a suspicious larva from an ash trap tree in a popular camping area in Fayette County. An ash inventory of the adjacent ½-mile area was completed and mapped within a few weeks of the specimen confirmation.

Initial delimiting surveys detected several infested trees, one of which was heavily infested, adjacent to the positive trap tree.

WVDA personnel conducted EAB visual surveys at 120 sites in 33 counties and used 257 mechanically girdled trap trees in 29 counties. EAB was only detected at one site in Fayette County.

Hemlock Woolly Adelgid (HWA) — HWA can now be found in 32 West Virginia counties with new detections in Logan, Marion, and Roane Counties. In 2007, 1,400 adult *Scymnus sinuanodulus* predatory beetles were released in Hawk's Nest State Park. *Laricobius nigrinus* beetles (330 adults) were released in Carnifex Ferry State Park. Selected previous release sites of *Sasajiscymnus tsugae, L. nigrinus*, and *S. sinuanodulus* were monitored for predator survival and impact on HWA.

The WVDA continued to treat high-value and high-visibility infested hemlocks with imidacloprid via stem and soil injection. A total of 261 trees were treated at 10 sites.

Sirex Wood Wasp — In 2007, the WVDA conducted a Sirex wood wasp survey using paired Lindgren funnel traps in 19 declining pine stands. Nine wood wasps representing four native species were collected. *Sirex noctilio* was not collected.

Forest Fire

FY 2007 was an average year for fire weather in West Virginia. A severe fire season was expected in the fall of 2007 due to severe drought conditions that the State was experiencing, but it did not materialize. In FY 2007, there were 750 wild land fires that consumed 9,699 acres, resulting in an estimated $3,103,583 in damage to natural resources. Debris burning (35 percent of the fires) and incendiary fires (31 percent of the fires) are the two leading causes of wildfires in West Virginia. West Virginia precipitation levels were approximately 12 inches below average this past fall. If rain and snow events do not continue, the 2008 spring fire season will be similar to the severe fire season expected last fall.

A USDA Forest Inventory and Analysis Survey Perspective for West Virginia

The most recent statewide U.S. Forest Service Forest Inventory and Analysis survey was completed in West Virginia in 2000. Survey results published in 2007 (USDA Forest Service Northern Research Station Resource Bulletin NRS–17) outlined several important features of West Virginia forests. In general, West Virginia forests are healthy and resilient, and continue to mature. Current trends indicate that trees are getting larger, timber volumes are increasing, and timber volume is improving. These improvements have occurred despite a near doubling of the timber harvest since 1989 to almost a billion board feet per year. There is a marginal decrease in the average number of trees per acre and an increase in average diameter as the forest matures. West Virginia forest sustainability, measured as growth-to-removal ratios, was highest for yellow-poplar and red maple when compared to other species. Species groups that had high annual mortality rates were Virginia pine at 3.9 percent and beech at 1.4 percent, due to competition and beech bark disease, respectively. Gypsy moth infestations have affected oaks, and hemlock woolly adelgid has more recently affected hemlocks. Despite these disease and insect damage factors, relatively few forest trees in West Virginia had a significant amount of dieback (greater than 20 percent).

For More Information

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